

The background of the report cover is a composite image. On the left, a close-up of a chrome faucet with water dripping into a bowl of fresh fruit, including red raspberries, red grapes, and blackberries. On the right, a large, dynamic splash of clear water against a light blue background. The text is overlaid on the right side of the cover.

# ANNUAL WATER QUALITY REPORT

WATER TESTING  
PERFORMED IN 2015

*Presented By*

**LIVERMORE**  
CALIFORNIA

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

PWS ID#: CA01-10-011

## Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you, should you ever have any questions or concerns about your water.

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Livermore City Council meets two times per month, beginning at 7 p.m. at the City Council Chambers, 3575 Pacific Avenue, Livermore, CA. Call the City Clerk at (925) 960-4200 for the exact meeting days, or the information can also be found on the city's Web site at [www.cityoflivermore.net](http://www.cityoflivermore.net).

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



## Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

**Inorganic Contaminants**, such as salts and metals, that can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

**Radioactive Contaminants**, that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity; turn off the tap when brushing your teeth; check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year; check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year; use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

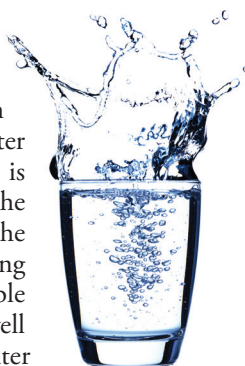


## What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef. According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish. To check out your own water footprint, go to [goo.gl/QMoIXT](http://goo.gl/QMoIXT).

## Where Does My Water Come From?

Since its inception, Livermore Municipal Water has received 100 percent of its wholesale water from the Zone 7 Water Agency, which treats water from the State Water Project in the Sacramento-San Joaquin Delta and ground water wells in Pleasanton. Zone 7 is the wholesale water agency in the valley responsible for managing the potable water sources and providing either disinfected surface potable water or disinfected potable well water for the valley retail water agencies. The chart in this report includes the water quality results from Zone 7's two water treatment facilities (Del Valle and Patterson Pass) and four well fields (Hopyard, Mocho, Stoneridge, and Chain of Lakes). Livermore Municipal Water still receives most of its water from the two treatment plants, but during 2015, 8.5% of the total water received was from the Zone 7 wells in Pleasanton.



## Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. (If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.) If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/lead](http://www.epa.gov/lead).

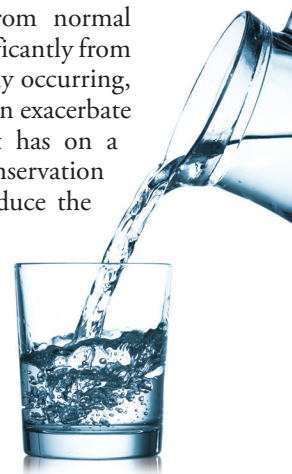
## To The Last Drop

The National Oceanic and Atmospheric Administration (NOAA) defines drought as a deficiency in precipitation over an extended period of time, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people. Drought strikes in virtually all climate zones, from very wet to very dry.

There are primarily three types of drought: Meteorological Drought refers to the lack of precipitation, or the degree of dryness and the duration of the dry period; Agricultural Drought refers to the agricultural impact of drought, focusing on precipitation shortages, soil water deficits, and reduced ground water or reservoir levels needed for irrigation; and Hydrological Drought, which pertains to drought that usually occurs following periods of extended precipitation shortfalls that can impact water supply (i.e., stream flow, reservoir and lake levels, ground water).

Drought is a temporary aberration from normal climatic conditions, thus it can vary significantly from one region to another. Although normally occurring, human factors, such as water demand, can exacerbate the duration and impact that drought has on a region. By following simple water conservation measures, you can help significantly reduce the lasting effects of extended drought.

To learn more about water conservation efforts, check out U.S. EPA's Water Conservation Tips for Residents at [www.epa.gov/region1/eco/drinkwater/water\\_conservation\\_residents.html](http://www.epa.gov/region1/eco/drinkwater/water_conservation_residents.html).



## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call David Lennier, Water Supervisor, at (925) 960-8100.

## Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES									
				Zone 7 Water Wholesaler					
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE		
Barium (ppb)	2015	1,000	2,000	124	ND–260	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits		
Chromium (ppb)	2015	50	(100)	0	ND–10	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits		
Fluoride (ppm)	2015	2	1	0	ND–0.1	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories		
Hexavalent Chromium (ppb)	2011	10	0.02	5	ND–11	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits		
Nitrate [as nitrogen] (ppm)	2015	10	10	2.4	ND–5.0	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits		
Turbidity <sup>1</sup> (NTU)	2015	TT	NA	0.28	ND–0.28	No	Soil runoff		
Uranium (pCi/L)	2015	20	0.43	ND	ND–3	No	Erosion of natural deposits		
Distribution System									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE		
Chloramines (ppm)	2015	[4.0 (as Cl2)]	[4 (as Cl2)]	1.48	1.19 - 1.72	No	Drinking water disinfectant added for treatment		
Haloacetic Acids (ppb)	2015	60	NA	20.3	13.5–29.7	No	By-product of drinking water disinfection		
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	59.1	39.7–81.3	No	By-product of drinking water disinfection		
Tap water samples were collected for lead and copper analyses from sample sites throughout the community									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE		
Copper (ppb)	2013	1,300	300	85	0/30	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives		
Lead (ppb)	2013	15	2	ND	0/30	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits		
SECONDARY SUBSTANCES									
				Livermore Municipal Water		Zone 7 Water Wholesaler			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2015	500	NS	NA	NA	110	52–226	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2015	15	NS	NA	NA	0	0–2.5	No	Naturally occurring organic materials
Specific Conductance (µS/cm)	2015	1,600	NS	NA	NA	850	570–1,011	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2015	500	NS	NA	NA	55	25–82	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2015	1,000	NS	NA	NA	492	311–614	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2015	5	NS	0.116	0.053–0.386	0.08	ND–0.28	No	Soil runoff

UNREGULATED SUBSTANCES						
		Livermore Municipal Water		Zone 7 Water Wholesaler		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
<b>Sodium</b> (ppm)	2015	NA	NA	68	33–142	Runoff/leaching from natural deposits
<b>Vanadium</b> (ppb)	2015	0.18	ND–0.51	0.06	ND–0.25	Natural element found in soil and rocks

OTHER UNREGULATED SUBSTANCES						
		Livermore Municipal Water		Zone 7 Water Wholesaler		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	AVERAGE AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
<b>Chlorate</b> (ppb)	2015	190	110–250	162.50	ND–300	Compound in pesticides and drinking water disinfection
<b>Chromium</b> (ppb)	2015	0.425	ND–1.7	0.06	ND–0.25	Leaching from soil and chrome plating industries
<b>Hexachrome</b> (ppb)	2015	0.401	0.043–1.4	0.107	0.040–0.21	Leaching from soil and chrome plating industries
<b>Molybdenum</b> (ppb)	2015	0.350	ND–1.4	ND	NA	Natural element found in soil and rocks
<b>Strontium</b> (ppb)	2015	247.50	190–360	232.50	180–310	Natural element found in soil and rocks
<b>Total Hardness as calcium carbonate</b> (ppm)	2015	NA	NA	282	108–403	Erosion of natural deposits

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

## Definitions

**AL (Regulatory Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**µS/cm (microsiemens per centimeter):** A unit expressing the amount of electrical conductivity of a solution.

**LRAA (Locational Running Annual Average):** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste and appearance of drinking water.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA:** Not applicable

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NS:** No standard

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**PDWS (Primary Drinking Water Standard):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**PHG (Public Health Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.